

The opinion in support of the decision being entered today was not written for publication and is not binding precedent of the Board.

Paper No. 17

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte DONALD C. ABBOTT, MICHAEL E. MITCHELL,
PAUL R. MOEHLE and DOUGLAS W. ROMM

Appeal No. 2004-1988
Application No. 09/733,718

ON BRIEF

Before KIMLIN, GARRIS and KRATZ, Administrative Patent Judges.
KIMLIN, Administrative Patent Judge.

DECISION ON APPEAL

This is an appeal from the final rejection of claims 1-6, 8-16 and 21-23. Claims 7 and 24, the other claims remaining in the present application, stand objected to by the examiner as being dependent upon a rejected base claim. Claim 1 is illustrative:

1. A leadframe for use in the assembly of integrated circuit chips, comprising:

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a base metal structure having an adherent layer of nickel covering said base metal;

an adherent film of palladium on said nickel layer; and

an adherent layer of palladium on said palladium film, selectively covering areas of said lead frame suitable for bonding wire attachment and solder attachment.

In the rejection of the appealed claims, the examiner relies upon the following references:

Abys et al. (Abys)	5,360,991	Nov. 1, 1994
Tsuji et al. (Tsuji)	5,521,432	May 28, 1996
Kim et al. (Kim)	5,767,574	Jun. 16, 1998

Appellants' claimed invention is directed to a leadframe that is used in the assembly of integrated circuit chips. The leadframe comprises a base metal structure having a nickel layer adhered thereon, a palladium film adhered on the nickel layer, and a layer of palladium adhered on the palladium film. The layer of palladium selectively covers areas of the leadframe that are suitable for bonding wire and solder attachments.

Appealed claims 1-3, 5, 9 and 21-23 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Kim. Claims 21-23 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Abys. In addition, claims 4, 6, 10 and 11 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Kim, whereas claims 8 and 12-16 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Kim in view of Tsuji.

Appellants submit at page 4 of the Brief that the following groups of claims stand or fall together: (a) claims 1-3, 5 and 8-11; (b) claims 12-16; (c) claims 21 and 22; (d) claim 4; (e) claim 6; and (f) claim 23.

We have thoroughly reviewed the respective positions advanced by appellants and the examiner. In so doing, with the exception of the examiner's § 103 rejection of claim 8, we will sustain the examiner's rejections for essentially those reasons expressed in the Answer. The examiner's § 103 rejection of claim 8 is reversed.

We consider first the examiner's § 102 rejection of claims 1-3, 5, 9 and 21-23 over Kim. Appellants contend that Figure 5 of Kim depicts a Pd-X alloy layer over a palladium layer, but "not a layer of palladium on a palladium film," as required by the rejected claims (page 5 of Brief, third paragraph). However, we fully concur with the examiner that "the claim language is not limited to unalloyed palladium [and] the claim language does not preclude a palladium alloy layer on the palladium film" (paragraph bridging pages 6-7 of Answer). Simply put, Kim's palladium-containing alloy layer reads on the presently claimed "layer of palladium." Appellants' claim language is tantamount to an adherent layer comprising palladium.

Appellants also maintain that they "cannot find a teaching or suggestion in Kim of selective deposition of *any* layer" (*id.*). However, we subscribe to the examiner's rationale that Kim's palladium layer 54 does not completely cover palladium film 53 since layer 54 selectively covers only the top surface of film 53, but not the side or bottom surface areas of film 53 (see page 7 of Answer, third paragraph). We note that appellants have not refuted the examiner's reasonable analysis.

We next consider the examiner's § 102 rejection of claims 21-23 over Abys. Appellants' argument that "in Abys there is nothing to suggest that layer 25 covers *only* portions of layer 23 rather than the complete layer" (page 6 of Brief, 4th paragraph) is not persuasive for the same reasons set forth above with respect to the § 102 rejection over Kim.

We now turn to the examiner's § 103 rejection of claims 4, 6, 10 and 11 over Kim. Like appellants, Kim discloses that the nickel layer can be formed of a stack consisting of a nickel layer on the base metal, followed by a palladium/nickel layer which, in turn, receives an additional nickel layer. While the stack layer of Kim has thickness dimensions outside the claimed ranges, we agree with the examiner that it would have been obvious for one of ordinary skill in the art to resort to routine

experimentation to determine the optimum thickness values for a particular application. It is well settled that where patentability is predicated upon a change in a condition of the prior art, such as a change in thickness or concentration or the like, the burden is on the applicant to establish with objective evidence that the change is critical, i.e., it leads to a new, unexpected result. In re Woodruff, 919 F.2d 1575, 1578, 16 USPQ2d 1934, 1936 (Fed. Cir. 1990); In re Aller, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955). In the present case, appellants have not advanced any argument, let alone objective evidence, that the claimed thickness ranges provide unexpected results. As for the reflow temperature of the solder layer recited in claim 11, appellants have not responded to the examiner's rationale that it would appear that the solder layer of Kim, comprising the same tin/lead material, has the same reflow temperature.

We now turn to the examiner's § 103 rejection of claims 8 and 12-16 over Kim in view of Tsuji. Appellants' argument with respect to claims 12-16 is essentially the same as that set forth against the § 102 rejection of claim 1 over Kim discussed above. However, the § 103 rejection of claim 8 is another matter.

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Claim 8 requires that "said palladium layer provides visual distinction to the areas covered by said layer." The examiner's statement in support of the rejection that "the process limitation (providing visual distinction) does not carry weight in a claim drawn to a structure" (page 2 of Answer, second paragraph) constitutes reversible error. We agree with appellants that the claim recitation is not a process limitation but, rather, a limitation regarding a physical characteristic of the claimed leadframe.

Upon return of this application to the examiner, the examiner should consider whether the palladium alloyed layer of Kim, in fact, provides a visual distinction to the area covered by the alloyed layer, bearing in mind the examiner's rationale discussed above regarding the exposed side surfaces of the palladium film.

In conclusion, based on the foregoing, the examiner's rejections of claims 1-6, 9-16 and 21-23 are sustained. The examiner's rejection of claim 8 is reversed. Accordingly, the examiner's decision rejecting the appealed claims is affirmed-in-part.

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No time period for taking any subsequent action in
connection with this appeal may be extended under 37 CFR
§ 1.136(a).

AFFIRMED-IN-PART

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Administrative Patent Judge)	
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BRADLEY R. GARRIS)	BOARD OF PATENT
Administrative Patent Judge)	APPEALS AND
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